Educational material for social marketing and behaviours linked to early detection of breast cancer

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ABSTRACT

Background: Social marketing is an effective tool to ensure a population-based behaviour change for a healthy lifestyle. Aim: The aim was to investigate the effects of breast cancer-related printed educational materials on women's behaviours related to early detection and diagnosis of breast cancer within the framework of social marketing. Method: This pre-post test one-group study was conducted with 80 women in a family health centre. An interview form, printed educational materials and follow-up form were used to collect the study data. The data were collected at the baseline and through phone calls at the third month. Results: Of the women, 36% had never performed breast self-examination (BSE), 55% had never had clinical breast examination (CBE), and 41% had never had mammography. There were no differences between the measurements made at the baseline and at the third month in terms of performing BSE, and having CBE and mammography. Conclusion: The importance of expanding social marketing approaches in terms of global health investments is emphasised. Adoption of positive health behaviours will lead to improvements in health status, as assessed through measures of morbidity and mortality status in cancer.

Key words: Breast cancer ■ Early diagnosis behaviors ■ Printed educational materials ■ Social marketing

According to the GLOBOCAN 2018 statistics, breast cancer, the most commonly diagnosed cancer worldwide, ranks fifth among the causes of deaths. According to the same statistics, while the incidence of age–related breast cancer is 23.7 per hundred thousand, the mortality rate is 6.6% (Bray et al, 2018). In Türkiye, as in other middle–income countries, breast cancer incidence is 43 per hundred thousand, and each year, 15 000 women are diagnosed with cancer (Bray et al, 2018).

Although there is, as yet, no early screening method to prevent breast cancer, early diagnosis affects the process and success of breast cancer treatment (Smith et al, 2019). Mammography considered as the gold standard, is the most recommended screening programme (Smith et al, 2019; Schünemann et al, 2020). Having a clinical breast examination (CBE) once a year is another recommended early detection practice (Saslow et al, 2004). Although it is not recommended by World Health Organization (WHO) as a screening method, breast self–examination (BSE) is recommended to increase women's awareness of breast cancer risk. The Ministry of Health in Türkiye recommends that BSE should be performed once a month after 20 years of age. In national cancer screening programmes in Türkiye, it is recommended that women should perform BSE once every month and have CBE once a year, and that women aged 40-69 years should have a mammogram every 2 years (Ministry of Health, 2016).

Social marketing campaigns sell behaviour to the target audience. The basic starting point of social marketing behaviour change theory/models is to make the desired behaviours valid and permanent in society. Social marketing initiatives focus on 'promotion of health, injury prevention, protection of the environment and community mobilization' (Kotler and Lee, 2008). Social marketing is used in health promotion for behaviours related to tobacco use, excessive alcohol consumption, obesity, breastfeeding and early diagnosis (Wakefield et al, 2010; Cheng et al, 2011; Firestone et al, 2017). The expectation is that behavioural change (taking action, taking precautions, etc) engaged in as a result of social marketing will improve an individual's health outcomes, increase his or her quality of life, and thus decrease mortality/morbidity rates (Cheng et al, 2011).

Social marketing campaigns conducted with mass media that encourage early detection and screening of various cancer types have been organized since the early 1990s (Baron et al, 2008; Anastasi and Lusher, 2019). Social marketing campaigns can be a solution for problems such as breast cancer, which potentially affects the entire female population (Wakefield et al, 2010; Schliemann et al, 2019). There are some examples in which social marketing has been implemented in a breast cancer context (Cant, 2008; Türkiye Breast Foundation, 2014; Pink Ribbon, 2016; Anastasi and Lusher, 2019). One example carried out in the UK is the TLC (Touch, Look, Check) message. It was promoted by the Department of Health in mass written educational literature. It was aimed at encouraging

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primary health professionals to discuss such issues as breast cancer awareness and self-examinations with patients (Cant, 2008). In Türkiye, several campaigns such as the 'Pink Ribbon Project' and a breast health peer education project ('I am aware of it so I am not afraid, I tell my friend') have been carried out using social marketing methods (Türkiye Breast Foundation, 2014; Pink Ribbon, 2016). In addition, under the supervision of the General Directorate of Public Health, the Pink Princess (mobile mammography screening vehicle) provides mobile mammography service in eight provinces including the province where the present study was conducted.

In order for social marketing to be successful, the four elements of the marketing mix, 'product, price, place and promotion', should be in synergy (Cheng et al, 2011). In breast cancer, BSE, CBE and mammography are the products. Considering the element 'price', BSE is an economical, simple method that does not consume time. CBE and mammography are free health services performed in primary care health services under the umbrella of the general health insurance. The element 'place' is mostly primary care health institutions. The element 'promotion' refers to the determination of guidelines and appropriate communication channels to create a change in behaviour. In this element, attention-grabbing and effective messages aimed at determining communication targets for the target audience are created. Among the possible promotional activities are printed brochures, promotional products, special event programmes and public campaigns (Grier and Bryant, 2005).

Three main templates of health education materials used within the framework of social marketing are: social marketing communication material, information and education communication material, and behaviour change communication material. In the information and education communication strategy, people are informed about a disease, and their knowledge is enhanced, enabling its use in a decision-making basis. The behaviour change communication type health education material also encourages change at an individual level to attain healthy community behaviour (Bryant et al, 2014). Health-related printed educational materials developed based on the information and education communication are made available to the public. In primary care, printed materials such as pamphlets, posters and booklets, on topics related to general public health problems are widely used, as are other types of written information including messages on social media (Gupta et al, 2019; Giguère et al, 2020). In various health programmes, health education materials aimed at encouraging a person to adopt, change, modify, or quit a behaviour to maintain a healthier lifestyle are provided. Although effectiveness of these materials is well-documented at the public level, it is comparatively limited at individual level (Firestone et al, 2017; Chichirez and Purcărea, 2018). However, effectiveness of these printed educational materials in breast cancer screenings and primary care is not clear (Anastasi and Lusher, 2019; Giguère et al, 2020). The goal of printed educational materials is to improve awareness, knowledge, attitudes, skills, and professional practice of health care providers. However, the impact of printed materials on behaviour/health outcomes is unknown. The present study was aimed at investigating the effect of printed educational materials used within the framework of social marketing on women's behaviours geared towards early detection of breast cancer (performing BSE and having CBE for all women, and having mammography for women over the age of 40 years). The main question of the study was: Is informing women about cancer screening programmes performed with printed educational materials effective in encouraging them to adopt early detection behaviours such as BSE, CBE and mammography?

Method

Design, setting, and sample

The present study with a pre-post test single group design was conducted between February and July 2019 in a family health centre in a district of metropolitan city located in western Türkiye. In Türkiye, a family health centre is where family physicians and nurses/midwives work together to provide primary healthcare services (women's health, paediatric care and follow up, immunisation, home care, care of the older person etc). Each family physician serves approximately 4000 people (Atun, 2015). In the family health centre where the study was conducted there are five physicians and five nurses, providing health services to 15800 people.

The centre is in a socioeconomically heterogeneous region. Of the people registered in the family health centre, 8000 are women, 4680 of whom are between the ages of 20 and 69 years. During the study process, literate women in the age group of 20-69 years who presented to the family health centre and met the inclusion criteria constituted the research population. After a pilot study was conducted with five women, it was decided not to make any revisions regarding the study process and data collection tools. The study data were collected from women who were reached between February and July and selected through the purposeful sampling method. After 80 women were reached, a power analysis programme was used to test whether the sample size was adequate (G★Power 3.1).

After the analysis, the strength of the sample size was determined as 82% at the 95% confidence level, and the study was terminated. The inclusion criteria of the study were: being literate, being between the ages of 20 and 69 years, agreeing to give a phone number for communication, not having any cancer diagnosis and volunteering to participate in the study. Of the women, those who were diagnosed with cancer, had language or psychiatric problems that prevented them from answering the questionnaire, performed all three early detection behaviours (BSE, CBE and mammogram) regularly, had CBE in the past year or had mammogram in the past 2 years were not included in the study.

Instruments

Interview form

The interview form consisted of two parts and 28 items. The items included in the first part asked for sociodemographic characteristics such as age, marital status, education level, occupation, perceived income, presence of a long-term condition (chronic disease) and perceived health status. The items included in the second part asked for the participants' knowledge and practices regarding early detection behaviours.

The following six questions were asked to assess their knowledge: 'Do you know what breast self-examination is?', 'Have you ever received any information about breast self-examination?', 'From whom or what source did you get information about breast self-examination?', 'Have you ever heard of clinical breast examination?', 'Do you know breast cancer screening programmes?' 'Do you know the Ministry of Health's web page on breast cancer community resources?'. The following six questions were asked to assess their early detection behaviours: 'Do you perform breast self-examination?', 'If so, how often do you perform it?', 'Have you ever had a physician perform a clinical breast examination?', 'If you have, how many times have you had it done?', 'Have you ever had a mammogram?' and 'How many times have you had one?' (The last two questions were asked of participants aged between 40 and 69 years).

Printed educational materials

In the present study, one poster and three brochures created by the Ministry of Health for early detection behaviour related to breast cancer and used as promotional material in social marketing nationwide were used. These materials are distributed to people free of charge in cancer early detection and screening training centres (which are primary care institutions) and in family health centres throughout the country, and in breast outpatient clinics of hospitals. These materials are also used for national cancer awareness month campaigns. Permission was obtained from the Ministry of Health to use these materials in the present study.

Follow-up form

The form was developed to use in interviews to be held 3 months after the first interview to determine whether the participants performed early detection behaviours or not. In the form, the participants' behaviours of starting to perform BSE regularly, of having CBE after the first interview, and of having mammography (for those aged 40 and over) in the last 3 months were recorded.

Interventions

The data were collected through face-to-face interviews using the question and answer method on weekdays in the breastfeeding room of the family health centre at the baseline and through phone interviews at 3 months after the baseline. After the purpose of the study was explained to the women who presented to the family health centre for any reason and who met the study's inclusion criteria, the interview form was administered to those who agreed to participate in the study. After the participants filled in the interview form, they were shown the printed educational materials used by the Ministry of Health within the framework of social marketing campaigns, and the information in these materials was summarised in 5 minutes in the same way they were provided in usual care. Three months after this interview, the participants were called and asked whether they performed early detection behaviours such as BSE, CBE, and mammography (the last for those in the 40-69 age group and having an indication), and the results

Table 1. Baseline demographic characteristics of women (*n*=80)		
Demographic characteristics	*n*	%
Age	39.88 ± 11.03	
Age groups		
<40 years	41	51.3
≥40 years	39	48.7
Educational status		
Literate but not a graduate of any school	5	6.3
Primary school graduate	57	71.2
High school graduate	14	17.5
University graduate	4	5.0
Marital status		
Married	69	86.2
Single	11	13.8
Working at a paid job		
No	70	87.5
Yes	10	12.5
Perceived income level		
Income less than expenses	24	30.0
Income equal to expenses	56	70.0
Presence of long-term condition requiring medication		
No	50	62.5
Yes	30	37.5
Type of long-term condition (*n*=30) [*]		
Hypertension	11	36.7
Diabetes	14	46.7
Endocrine disorders	7	23.3
Heart disease	3	10.0
Others	11	36.7
Perceived health status		
Poor	10	12.5
Good	31	38.8
Fair	39	48.7
Total	80	100.0

* More than one option was marked

were recorded in the follow-up form. No women left the study.

Data analysis

The study data were analysed using the SPSS 25.0 statistics package programme (IBM Corp). The distribution of the sociodemographic characteristics of the participants was given in numbers and percentages. Findings on how the participants

Table 2. The participants' knowledge of and practices on early diagnosis behaviours at baseline		
Characteristics	**_n_**	**%**
Being knowledgeable about BSE		
No	66	82.5
Yes	14	17.5
Receiving information on BSE		
No	13	16.2
Yes	67	83.8
Source of the information on BSE (_n_=67)*		
TV/radio	44	65.6
Health workers	31	46.2
Social media	12	17.9
Written materials (brochures/posters)	6	8.9
Having heard of CBE		
No	40	50.0
Yes	40	50.0
Being knowledgeable about mammography		
No	22	27.5
Yes	58	72.5
Performing BSE		
No	29	36.3
Yes (regularly)	51	63.8
Having CBE		
Never	44	55.0
Yes	36	45.0

Table 2. The participants' knowledge of and practices on early diagnosis behaviours at baseline _(continued)_		
Characteristics	**_n_**	**%**
Number of CBE undergone (_n_=36)		
Once	22	61.1
Twice	2	5.5
Three times	1	2.8
Four times	5	13.9
Five or more times	6	16.7
Having mammography (_n_=39)**		
No	16	41.0
Yes	23	59.0
Having heard of or being knowledgeable of breast cancer screening programmes		
No	38	47.5
Yes	42	52.5
Being aware of breast cancer screening programme activities in the place of residence		
No	52	65.0
Yes	28	35.0
Being aware of the Ministry of Health's web page on breast cancer community resources		
No	71	88.8
Yes	9	11.2
Total	80	100.0

* More than one option was marked
** Participants over the age of 40
BSE=breast self-examination, CBE=clinical breast examination

performed breast cancer early detection behaviours according to their sociodemographic characteristics were analysed using the chi square test. McNemar's chi-square analysis was performed to find out the difference between the baseline and 3 months post–baseline in terms of performing early detection behaviours. In order to make relevant analysis, the participants who were literate but not a graduate of any school and the participants who were primary school graduates were included in the same group because the number of those in the former group was very few. In all the statistical analyses, _P_-values less than 0.05 were considered significant.

Ethical consideration

Results

Sociodemographic and health characteristics of the participating women

The mean age of the participants was 39.88 (SD: 11.03) years. Of them, 71% were primary school graduates, 86% were married, 70% had an income equal to their expenses, 63% did not have a long-term condition, and 49% perceived their health as fair (_Table 1_).

In _Table 2_, the participating women's knowledge of, and attitudes towards, early detection behaviours are given. Although 18% of the participants stated that they were knowledgeable about BSE, 83% lacked knowledge about it (did not know what BSE was). For those who were knowledgeable, sources were as follows: TV/radio (66%), healthcare workers (46%), social media (18%) and written materials (9%). According to their statements, although 50% of the participants had never heard of CBE, 28% did not know what mammography is. Whereas 64% of the participants regularly performed BSE once a month, 45% had CBE at least once. Of those who previously had CBE, 61%

Table 3. Distribution of early diagnosis behaviours displayed by the participants at the baseline and at the third month according to some of their characteristics

	Performing BSE				Having CBE				Having mammography§			
	At the baseline		At the 3rd month		At the baseline		At the 3rd month		At the baseline		At the 3rd month	
	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)
Age												
< 40 years	17 (58.6)	24 (47.1)	13 (68.4)	28 (45.9)	24 (54.5)	17 (47.2)	24 (61.5)	17 (41.5)	-	-	-	-
≥ 40 years	12 (41.4)	27 (52.9)	6 (31.6)	33 (54.1)	20 (45.5)	19 (52.8)	15 (38.5)	24 (58.5)	-	-	-	-
Analysis	χ^2=0.98 P=0.32		χ^2=2.94 P=0.08		χ^2=0.42 P=0.51		χ^2=3.22 P=0.07		-		-	
Educational status												
Literate but not a graduate of any school/primary school graduates*	24 (82.8)	38 (74.5)	15 (78.9)	47 (77.0)	34 (77.3)	28 (77.8)	30 (76.9)	32 (78.0)	12 (75.0)	21 (91.3)	6 (75.0)	27 (87.1)
High school graduates / university graduates†	5 (17.2)	13 (25.5)	4 (21.1)	14 (23.0)	10 (22.7)	8 (22.2)	9 (23.1)	9 (22.0)	4 (25.0)	2 (8.7)	2 (25.0)	4 (12.9)
Analysis	χ^2=0.72 P=0.39		χ^2=0.03 P=0.86		χ^2=0.00 P=0.95		χ^2=0.01 P=0.90		χ^2=1.92 P=0.20		χ^2=0.71 P=0.39	
Marital status												
Single	6 (20.7)	5 (9.8)	4 (21.1)	7 (11.5)	6 (13.6)	5 (13.9)	6 (15.4)	5 (12.2)	2 (12.5)	4 (17.4)	2 (25.0)	4 (12.9)
Married	23 (79.3)	46 (90.2)	15 (78.9)	54 (88.5)	38 (86.4)	31 (86.1)	33 (84.6)	36 (87.8)	14 (87.5)	19 (82.6)	6 (75.0)	27 (87.1)
Analysis	χ^2=1.84 P=0.17		χ^2=1.12 P=0.29		χ^2=0.00 P=0.97		χ^2=0.17 P=0.67		χ^2=0.17 P=0.67		χ^2=0.71 P=0.39	
Having a family history of cancer												
No	22 (75.9)	37 (72.5)	14 (73.7)	45 (73.8)	35 (79.5)	24 (66.7)	28 (71.8)	31 (75.6)	12 (75.0)	17 (73.9)	6 (75.0)	23 (74.2)
Yes	7 (24.1)	14 (27.5)	5 (26.3)	16 (26.2)	9 (20.5)	12 (33.3)	11 (28.2)	10 (24.4)	4 (25.0)	6 (26.1)	2 (25.0)	8 (25.8)
Analysis	χ^2=0.10 P=0.74		χ^2=0.00 P=0.99		χ^2=1.69 P=0.19		χ^2=0.15 P=0.69		χ^2=0.05 P=0.81		χ^2=0.00 P=0.96	

χ^2=chi-square test

* Those who were literate but not a graduate of any school and those who were primary school graduates were combined in one group

† Those who were high school graduates and those who were university graduates were combined in one group

§ For the participants over the age of 40 years

had it only once. Of the participants over the age of 40 years, 59% had a mammogram at least once. Of the participants, 53% had heard of/knew about breast cancer screening programmes, 35% were knowledgeable of the activities related to breast cancer screening programmes in their place of residence, and 89% did not know that the Ministry of Health had a web page on breast cancer community resources (*Table 2*).

During the phone calls made at the third month, no correlation was determined between the participants' performing BSE, and having CBE and mammography and the variables such as age, education and marital status (*P*>0.05) (*Table 3*). Although the number of women performing BSE, and number of CBE and mammography undergone by the participants who previously had not performed early detection behaviours increased during

the third-month interview, there was no statistically significant difference between the number of BSEs performed, and CBE and mammography undergone at the baseline and at the third month (*P*>0.05) (*Table 4*).

Discussion

The present study was conducted to investigate the effects of brochures used within the framework of social marketing on women's early detection behaviours (BSE, CBE and mammography). To the best of the authors' knowledge, the present study is the first study in which printed education materials related to breast cancer are addressed within the framework of social marketing.

Although the majority of the women participating in the

Table 4. Comparison of the participating women's early diagnosis behaviours at the baseline and third month interviews

	Those not performing BSE and not having CBE and mammography at 3 months	Those performing BSE and/or having CBE and/or mammography at 3 months	Analysis
Performing BSE at baseline			
No	8	22	
Yes	15	35	x^2=0.324
Having CBE at baseline			
No	25	19	
Yes	27	9	x^2=0.487
Having mammography at baseline			
No	4	11	x^2=1.000
Yes*	11	13	

x^2: McNemar's Test

*Over the age of 40 or with mammography indication

BSE=breast self-examination, CBE=clinical breast examination

study (84%) stated that they were knowledgeable about or had heard of BSE in some way, the rate of those who did not know what BSE was high (83%). The proportion of women performing BSE regularly was also low (18%). Although the rate of female workers performing BSE regularly was 15.2% in a study in north west Ethiopia by Dagne et al (2019), 72% of participants regularly performed BSE in a cohort study in Thailand (Thaineua et al, 2020). In Abay et al's (2018) study, of the women who presented to a primary care health service in Ethiopia, 55.5% were knowledgeable of BSE, but the rate of those performing it was 6.25% . The results of several studies (Abay et al, 2018; Dagne et al, 2019) indicated that the rate of women who were knowledgeable of BSE was high, but the rate of those who performed BSE regularly every month, was low (except for in Thaineua et al's (2020) study). All these results demonstrate that when BSE training programmes targeting women are planned, focus should be not only on knowledge acquisition, but also on awareness–raising and behavioural change through skill building.

In social marketing campaigns, integrated strategies are implemented (Firestone et al, 2017; Gupta et al, 2019) to deliver messages designed to positively influence and persuade target audiences in the field of health to change or maintain healthy behaviours. In social marketing, to encourage the target audience to adopt a behaviour, promotion is used. Promotion covers all means of communication that enable women to be aware of early detection behaviours. Mass media, brochures, public service announcements, public health nurses' home visits to achieve controls are examples of promotion. As in the present study, in several studies, mass media are mentioned as the most frequently used promotion tool (Noroozi et al, 2011; Abay et al, 2018). However, it is not known how much information the programmes/broadcasts available in the mass media today

provide to meet women's needs. Although the mass media is the greatest source of information, the number of women who are aware of, and perform, early detection behaviours is low. A small portion of the women (9%) received information from printed educational materials, which suggests that information provided by printed educational materials is no more than superficial. In addition, homogeneous messages given both by mass communication and by printed educational materials may not be convincing for the entire target population (Wakefield et al, 2010). In the country where the research was conducted, the Ministry of Health distributes printed educational materials about health protection and development to the public free of charge. The internet can be a source of information. However, in many countries, large segments of society may have limited access to resources on the internet. Sometimes, the low level of information and health literacy of individuals also prevents the use of the internet as a source of information. Therefore, written materials are still widely used in order to reach different segments of the society. All of these indicate the importance of effective use of the chosen method of promotion in social marketing.

Even though one out of every two women had heard of CBE, the rate of women who had previously undergone CBE was low. The vast majority of them had it only once. In several studies, the rate of having CBEs regularly ranges between 25 and 40%, with Donnelly et al (2013) putting it at 31.3%. The results of the studies indicated that the rate of getting CBE by women was low. Various factors may influence the behaviour of not having a CBE. These results may have stemmed not only from the fact that women not have little knowledge CBE but also from it being culturally accepted as embarrassing and disturbing (Aksoy et al, 2015). Taking these factors into consideration while social marketing strategies are applied will contribute to the adoption of the behaviour.

The most important benefit of mammography is to detect breast cancer at an early stage, to reduce mortality rates, and to increase treatment options (Schünemann et al, 2020). More than half of the women (73%) participating in the study stated that they knew about mammography. Considering the number of people who knew about mammography, the low rate of having mammography is thought-provoking (59%). The proportion of people who have mammograms in countries where mammography is recommended is also low. In several studies conducted on the issue, it has been reported that among the reasons women do not have mammography are lack of information and lack of education (Wakefield et al, 2010; Aksoy et al, 2015). Among the other reasons for such low rates are that women find the procedure uncomfortable and painful, that they do not want to receive radiation, and that they fear the possibility that the result might be bad (Aksoy et al, 2015). The participating women were not asked why they did not want to have mammography because it was not the purpose of this study. However, while social marketing activities are planned, the reasons for not performing the behaviour should be considered in the creation of promotion attempts.

In the present study, the rate at which participants displayed early detection behaviours (BSE, CBE and mammography) at

the third–month interview was not different from those they displayed at the first interview. In addition, variables such as age, education and marital status did not lead to a difference between early detection practices performed at the first and third months. Providing the participating women with printed educational materials and brief information in the interviews indicated that this was not effective in awareness raising and behaviour change. Although it was not statistically significant, the number of the participating women who performed BSE, and had CBE and mammography increased in the third month interview.

The greatest increase was observed in performing BSE and having mammography, which was probably due to the fact that BSE was economical and did not take time, and that mammography was regarded as the most advanced diagnostic method (Tabár et al, 2019). Since BSE is a skill-based early detection method, it is recommended that women should be taught how to perform it through one-to-one training (Açıkgöz et al, 2015).

In the present study, due to its design, it was not observed how accurately and effectively the participating women performed BSE after they were provided with printed educational materials and brief information. All these results suggest that printed educational materials, which are frequently used within the framework of social marketing, are not sufficient alone to have women perform early detection applications related to breast cancer. In this case, information technologies, which are increasingly digital for the promotion element of social marketing components, come to the fore as methods that can be used to encourage individuals to undergo early detection applications in cancer. It is inevitable for these information technologies to be designed to include individuals from different socioeconomic levels and cultures for correct promotion activity. It is important to carry out studies that will test the effect of multiple methods as a social marketing method in the future. The present study's results indicate the importance of testing the effectiveness of information and education communication and behaviour change communication materials that will be used by decision makers and policy makers such as the Ministry of Health in meeting the health needs of the society if participation in early detection practices is to be increased. In addition, the importance of individual training is revealed once again by using various methods aimed at gaining women knowledge and skill behaviour by health professionals working in primary care. Provided that programmes are carried out by health professionals with good communication skills and social marketing knowledge, women will be able to perform early detection behaviours (Heena et al, 2019).

Limitations

The European Commission Initiative for Breast Cancer Screening and Diagnosis Guidelines provides recommendations regarding organised screening programmes for women aged 40 to 75 years who are at average risk (Schünemann et al, 2020). However, there are countries where mammography is not included in national cancer screening programmes. The present study reflects the results of women in a country where

KEY POINTS

- Social marketing is an effective tool for a population-based behaviour change and should focus on enabling behavioural changes
- The effectiveness of printed educational materials (PEMs) in screening programmes is not clear
- Printed educational materials are frequently used within the framework of social marketing and not sufficient alone to have women perform behaviours linked to early diagnosis
- There is a need for promotional activities that will be effective in ensuring participation in national cancer screening programmes, and adopting and maintaining early diagnosis behaviours
- In the implementation of social marketing mix to health promotion initiatives, nurses, family physicians who are primary care workers and in close relationship with the society can take an active role in planning, organising these initiatives, recognising and reaching the target audience

mammography is routinely offered to women over 40 in the national cancer-screening programme.

The study included women aged 20–69 years who presented to a family health centre. The results obtained from the present study are applicable only to the women surveyed. Another limitation of the study was that assessments of the participants' early detection behaviours were based on subjective reports. The present study was conducted within the scope of a master's thesis; therefore, the follow-up period was limited to 3 months. It is recommended that future studies have a longer follow-up period. Lastly, due to the design and purpose of the study, illiterate people or those with learning disabilities were excluded from the sample, so it may be necessary to conduct studies that will determine the effect of educational materials in illiterate women or women with learning difficulties.

Conclusion

The results of the current study demonstrated that there is a need for promotional activities that will be effective in ensuring participation in national cancer screening programmes, and adopting and maintaining early detection behaviours. Therefore, conducting studies with larger samples in which the effects of information and education communication materials and behaviour change communication materials used within the scope of promotion activities on early detection behaviours are investigated will fill in the gap on this issue. Preparing digital educational materials instead of printed educational materials created by institutions to improve individuals' early detection behaviours, and testing the effectiveness of these digital materials may be another important practice to be performed.

In the implementation of social marketing mix to health promotion initiatives, nurses, family physicians who are primary care workers and in close relationship with the society can take an active role in planning, organising these initiatives, recognising and reaching the target audience, and can play an active role in the realisation of social marketing processes. In order for health professionals to be involved in social marketing activities, it would be appropriate to include social marketing

in the education curriculum of health professionals. Finally, the importance of expanding social marketing approaches in terms of global health investments can be emphasized. Thus, the adoption of positive health behaviours (ie taking preventive or treatment action) to be achieved will lead to improvements in health status, as assessed through measures of morbidity and mortality status in cancer. **BJN**

Declaration of interest: none

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CPD reflective questions

■ What is the place and effectiveness of social marketing practices in behaviour change?

■ What might be the social marketing practices that can direct individuals to early diagnosis practices in cancer?

■ How can nurses integrate social marketing practices into nursing initiatives?